

CLAIMS:

1. A device for iontophoretic delivery of a drug to or into a tissue, comprising an arrangement that prevents operation of the device at a current density that is higher than a predetermined value, said arrangement including
5 first means responsive to a first data item, indicative of the surface area through which the current is to pass, as to set the maximal current allowed at the surface area indicated by said data item.
2. A device according to claim 1, further comprising second means, being responsive to a second data item, indicative of the tissue to be treated, said first
10 and second means being responsive to said first and second data items as to set the maximal current allowed at the surface area indicated by said first data item for treating the tissue indicated by said second data item.
3. A device according to claim 1 or 2, further comprising an arrangement that prevents the continuous operation of the device for a time duration longer
15 than a predetermined time value, said arrangement including means responsive to said first and/or second data item as to set the maximal duration of continuous operation in accordance with the surface area indicated by said first data item and optionally also in accordance with the tissue indicated by said second data item.
- 20 4. A device according to claim 1, including input means for manually inputting data that is indicative to the surface area.
5. A device according to any one of the preceding claims comprising:
 - (a) a contacting member capable of contacting with the tissue a drug-
containing sponge, said contacting member being capable of transmitting a
25 signal indicative of the surface area of said sponge; and
 - (b) a receiving element, capable of receiving said signal and being in communication with said first means.

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6. A device according to claim 5, wherein said contacting member including a transducer and said receiving element is a microprocessor in communication with said transducer.

7. A device according to any one of the preceding claims, including a
5 microprocessor programmed with a table including predetermined values of maximal current as function of the surface area or as function of the data indicative thereof.

8. A device according to claim 7, wherein said microprocessor is also
10 programmed with a table including predetermined values of maximal current as function of the surface area and the tissue, or as function of the data indicative thereof.

9. A device according to claim 7 or 8, wherein said microprocessor is also
15 programmed with a table including predetermined values of maximal operation durations as function of operation current and the tissue, or as function of data indicative thereof.

10. A device according to any one of the preceding claims, designed specifically for iontophoretic administration of charged drugs to eye tissue, mucosal tissue, or internal tissue.

11. A device according to claim 10 comprising:
20 - an applicator formed with a receiving portion adapted for holding a replaceable sponge loaded with said charged drug and allowing contact of at least a portion of the sponge with a surface of the tissue;
- a first data input element, allowing to input thereby data indicative of the area of said portion;
25 - an electric current generating element, for generating currents not higher than a predetermined value, being electrically coupled to said receiving portion such that the current once generated passes through the sponge in a direction essentially normal to said surface;
- a processor capable of determining said predetermined value in
30 accordance with the data inputted by said first data input element.

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12. A device according to claim 11, further comprising a second data input element allowing to input thereby the specific tissue to be treated and said processor is being capable of determining said predetermined value in accordance with this data and in accordance with the data indicative of the sponge's area.
13. A device according to claim 1, wherein said first means includes a processor.
14. A method for iontophoretically administering drug to or into a tissue, comprising determination of a maximal allowed level of current density and preventing application of current density above said maximal allowed level.
15. A method according to claim 14, wherein said determination is done in consideration of the tissue's sensitivity to electric current.
16. A method according to claim 14 further comprising determination of a maximal allowed duration of continuous current application to the tissue and preventing the continuous application of current for time durations longer than said maximal allowed duration.
17. A method according to claim 16, wherein said determination is done in consideration of the sensitivity to electric current of the tissue to be treated and of the current density applied.
18. A sponge having a porous structure, wherein said porous structure allows the sponge to absorb and hold at least 30% w/w aqueous solutions without dissolving or disintegrating, said sponge carries a data transmitting module capable of transmission of a data indicative of the sponge's size and/or surface area of contact of the sponge with the tissue.
19. A sponge according to claim 18, wherein said transmitting module is a chip.
20. A sponge according to claim 18 or 19, wherein said transmitting module is coated with a water protecting coat.

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21. A sponge according to any one of claims 18 to 20 made of non-hydrophilic polymers, such as polystyrene, polymethacrylates, silicones and urethanes.

22. A sponge according to any one of claims 18 to 20 made of hydrophilic substances with functional groups that associate well with water molecules, such as hydroxy, ether, amide, thiol, carboxylic acid, and amine groups.

23. A sponge according to any one of claims 18 to 20 made of hydrophilic polymers such as crosslinked hydroethylmethacrylate (HEMA), polyethylene glycol, crosslinked polysaccharides and proteins, and polyvinyl pyrrolidone.

24. A sponge according to any one of claims 18 to 20 made of swellable hydrophilic-hydrophobic copolymers such as HEMA-methyl methacrylate copolymers.

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